

Little Minnesota River / Big Stone Lake Restoration Project



Roberts Conservation District

Roberts County, SD

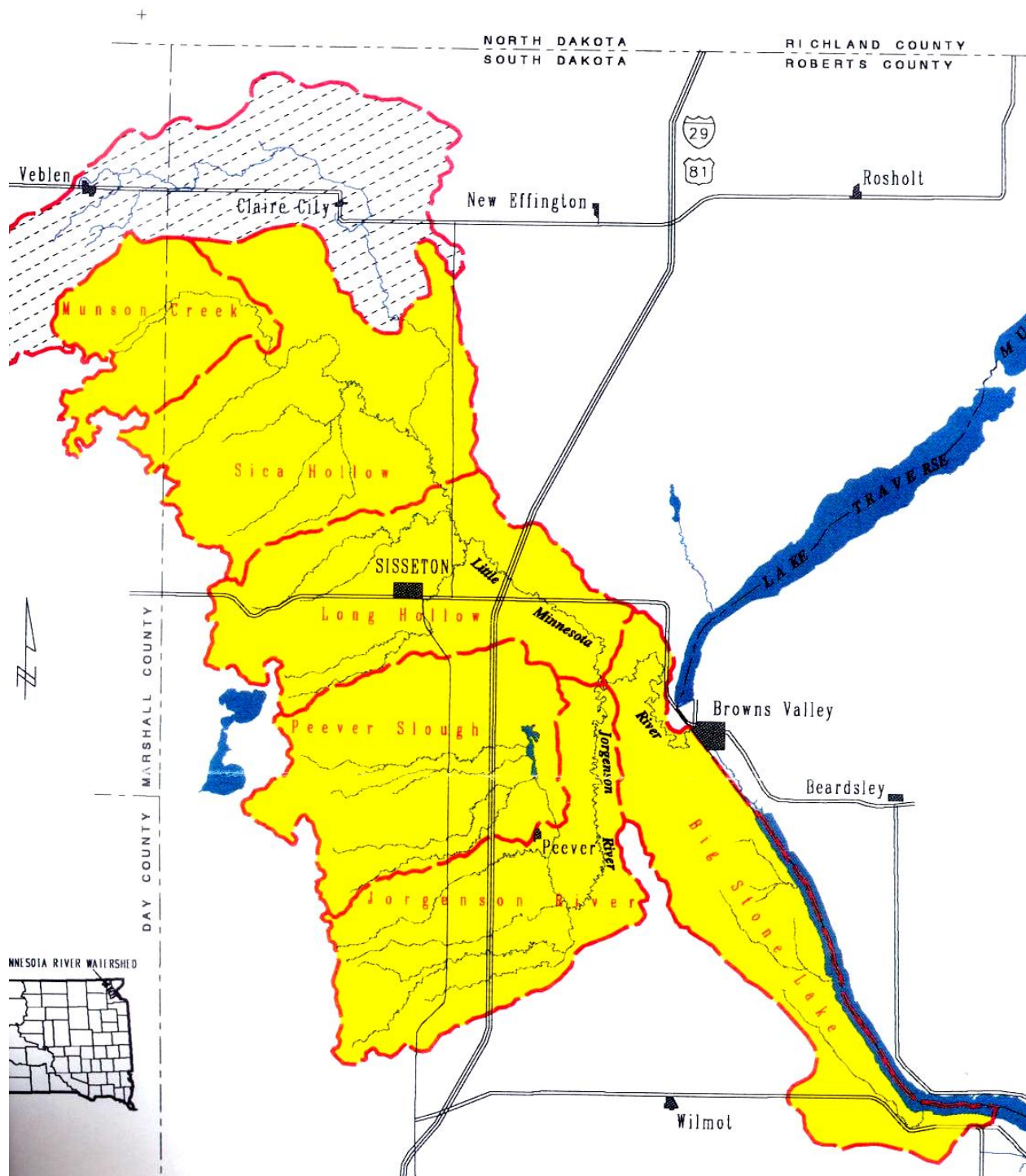
Mike Jensen

Project Coordinator



Project Area

- **Watershed Project Area: Approx. 247,873 acres**
- **Cropland: 130,176**
- **Rangeland: 68,489**
- **Hay and CRP: 26,900**
- **Woodland: 9,915**
- **Other: 12,393**



Big Stone Lake

- **Surface area: 12360 acres**
- **Maximum Depth: 16 feet**
- **Average Depth: 8 feet**
- **Length 26 miles**
- **Shoreline: 62 miles**
- **Storage: 98,880 acre feet**

Little Minnesota River

- **Approximately 40 miles long**
Actual river miles not calculated
- **780 feet vertical drop from headwaters to mouth**
- **Empties into upper end of Big Stone Lake**
- **1025 ft elevation difference in project area**

BSL Water quality problems

- **Hypereutrophic**
- **Excessive algal blooms**
- **Overabundant, rooted, aquatic plants**
- **Decreasing lake depth**

Causes

- **Primarily non-point sources**
- **Phosphorus loading and sediment from:**
 - **Cropland erosion**
 - **Fertilizer runoff**
 - **Feedlot runoff**
 - **Poor rangeland condition**
 - **Lakeshore erosion**
 - **Streambank erosion**

Causes (cont.)

- **Point Sources Included:**
- **Lake side septic systems**
- **Wastewater Treatment Systems at,**
 - 1) **Sisseton, SD**
 - 2) **Browns Valley, MN**
 - 3) **Veblen, SD**
 - 4) **Peever, SD**

Project Sponsors

- **Roberts County Commission**
- **Roberts Conservation District**
- **Marshall County Conservation District**

Involved Agencies

- **Natural Resources Conservation Service**
- **SD Dept. of Environment and Natural Resources**
- **SD Dept. of Ag; RC&F**
- **Farm Service Agency**
- **US Fish and Wildlife Service**
- **SD Dept. of Game, Fish and Parks**

Involved Agencies (Cont.)

- **Sisseton-Wahpeton Sioux Tribe**
- **Bureau of Indian Affairs**
- **SD Association of Conservation Districts**
- **SD Cooperative Extension Service**
- **Environmental Protection Agency**

Involved Agencies (Cont.)

- **City of Sisseton**
- **City of Peever**
- **Citizens for Big Stone Lake**
- **Upper Minnesota River Watershed District**

Water Quality Goals (Early)

- **Stated Goal from Early Project Periods 1985-1994:**
“To increase the recreation potential and lifespan of Big Stone Lake.”

Water Quality Goals (Cont.)

- **NRCS PL-566 Goals include:**
- **36% Reduction of Phosphorus Loading**
- **16% Reduction of Sediment Loading**

Water Quality Goals (Cont.)

- **Goal from Project Implementation Plans 1995-present:**

Decrease sediment and Phosphorus loadings by 56%

Current Project Goals/Accomplishments

Products	Planned	Accomplished
Animal Waste Management Systems	17	8
No-Till Acres	8500	11056
Multiple Use Ponds	62	59
Streambank / Riparian Demonstration Projects	3	3
Grassed Waterways	36	39
Nutrient Management Plans	30	23
Farm Show Display / Booth	6	7
Pasture / Hayland Seedings	0	25
Grazing Land Improvement Acres	0	15334
Buffers / Filter Strips (CCRP)	0	910.1

Total Accomplishments

- **AWMS: 51**
- **Grassed Waterways: 59**
- **No-till: 36,515 acres**
- **Ponds/Dams: 115**
- **Grazing system cross fences: 71,100 lf**

AWMS



POND



Grassed Waterway



Stream Bank Erosion Control



Riparian Forest Buffer



No-till: Soybeans in wheat stubble



Accomplishments (Cont.)

- **Pasture/hayland planting: 2078 acres**
- **Numerous, alternative water sources for grazing management including: wells, pipelines, tanks, spring developments**
- **Exclusion fences**
- **Grazing Management Plans on approximately 16,360 acres**

Alternative Water Source and Cross-fence for Grazing Management



Cross-fence for Grazing Management



Public Awareness Signs

Lower Little Minnesota River Big Stone Lake Restoration Project



The overall goal of the restoration effort is to increase the recreation potential and the health of Big Stone Lake by decreasing sediment and phosphorus loads. The plan is to implement selected restoration practices through cost share available to producers. Landowners' conservation on their land will benefit both the watershed and the individual.

The project sponsors in Roberts County, SD: Roberts Conservation District has taken the lead role as grant administrator, coordinating between the other agencies involved with the project: Natural Conservation District, Natural Resources Conservation Service (NRCS), SD Dept. of Environment & Natural Resources (DENR), EPA, and Natural Resource Technical Assistance Team; East River Natural Resources Park Service Agency (FWS), SD Park & Wildlife, South Dakota Game, Fish & Parks, Citizens for Big Stone Lake (CBL), Southern Minnesota River Water Conservation District, SD Department of Agriculture (SDA), and Environmental Protection Agency (EPA).
Water quality is everyone's responsibility. Please help us in protecting our water resources.
Roberts Conservation District 1040
PO Box 104 1 2000 S. Hwy. 10
Roberts, SD 57056
(605) 646-2025

Load Reductions

- **Current Project Period:**
 - **Sediment Reduction approx. 21,435 T/yr**
 - **P Reduction approx. 57,360 lb/yr**

Load Reductions Total

- **Calculated Reductions Since Mid 1980's**
 - **116,235 lb/yr Phosphorus**
29.6% Reduction
 - **45,836 Tons/yr Sediment**
32% Reduction

Other Land Treatments, Not Calculated

- **Increases in acreage of General Sign-up and some Continuous Sign-up CRP: CP's 1 – 2 – 10 – 23 etc.**
- **WRP and Flood Plain Easement acres in the watershed**

Cost Share Funding Sources

- EPA 319
- NRCS PL-83-566, Small Watershed
- EQIP
- USFWS
- SD Game, Fish and Parks
- FSA Continuous sign-up Conservation Reserve Program (CCRP)
- CDBG
- Agricultural Conservation Program (ACP)

Technical Assistance

- EPA
- Conservation District
- SD DENR
- SD Ag Waste Team
- NRCS Engineers
- NRCS FO Personnel
- USFWS

Current Project Funds Expended

- **EPA 319: \$349,945**
- **Local and Producer Match: \$375,671**
- **Other Federal Funds: Approx: \$588,767
(PL-566, EQIP)**

Total Known Expenditures Roberts County (Ag)

- **EPA: \$982,616**
- **State, Local, Producer: \$1,010,518**
- **Other Federal Funds: \$993,066**
- **Total Expenditures Approximately
\$2,986,200**

Point Source Expenditures

- **Browns Valley Wastewater Facility:**
\$2,400,000, 55% Federal, 20% State,
25% Local
- **Sisseton Wastewater Facility: \$1,695,404**
\$1,238,615 Federal, \$456,790 Bond Issue

Grant County, SD

- **AWMS \$93,274 CDBG & Local**
- **Lake Farley Restoration: About \$307,000**

Grant County, SD

- **Lake Level and Whetstone River Flow Management: \$12,300,000**
 - **\$227,000 of this was nonfederal**
 - **Diverts about 1460 cfs away from lake at normal elevation.**

Wrap Up

- **Remaining PL-566 and EQIP Construction Projects**
- **According to 2006 Integrated Report: BSL is listed as “Water impaired but has an approved TMDL”**
- **There is still work to be done in the watershed.**

Future projects

- **Roberts Conservation District remains committed to assisting local producers and residents in reducing soil erosion and improving water quality.**
- **Lake Traverse TMDL has been initiated.**
- **Moving to implementation with the Northeast Glacial Lakes Watershed Improvement and Protection Project.**
- **Still working with NRCS on a Small Watershed Project for Whetstone River.**

Comments/Questions

- **Thank you**